

ABSTRACT OF THE DISCLOSURE

According to the present invention, there is provided a method of designing a collimator array device which enables reduction of the insertion loss because of the variation of the optical length. When the beam waist is positioned at the intermediate position between the emitting side planar microlens and the receiving side planar microlens ($d_1 = L / 2$), the distance d_0 between the emitting side fiber array and the emitting side planar microlens can be used as the distance between the receiving side fiber array and the receiving side planar microlens, and thereby the design of the collimator array device can be simplified. The distance d_0 for satisfying $d_1 = L / 2$ is calculated and two values d_{0-2} and d_{0-4} are obtained. By selecting the smaller value d_{0-2} , it is possible to reduce the insertion loss because of the shift at the time of coupling.

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